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tution, Washington, September 24, 1867; from the President and Librarian of Yale College, New Haven, January 25, 1868; and from the Peabody Institute, at Baltimore, February 3, 1868, returning thanks for publications of this Society. Also from John N. Stockwell, Bucksville, Ohio, January 17, and from the Librarian of Yale College, announcing donations for the Library.

Donations for the Library were announced, viz.: From the Geographical Society of Paris; from the School of Mines of Paris; from Charles Dionisotti, of Turin; from the Royal Astronomical Society of London; from J. H. Pollen, London; from Dr. Edward Jarvis, Boston; from the Essex Institute; from Prof. Jeffries Wyman; from John N. Stockwell, A.M.; from James Gallatin, New York; from the Editors of the American Journal of Science and Art; from the Franklin Institute; from the free Public Library of New Bedford, and from the publisher of the Medical News.

The death of Charles G. B. Daubeny, M.D., a member, was announced as having occurred December 13, 1867, aged 72 years. Also of M. Flourens, M.D., of Paris, December, 1867, in the 73d year of his age.

New nomination No. 586 was read. And the Society was adjourned.

Stated Meeting, February 21, 1867.

Present, fourteen members.

Dr. Wood, President, in the Chair.

Mr. Samuel J. Gummere, a recently elected member, was introduced.

Letters were read: From the Royal Saxon Society of Sciences, Leipsig, November 2, 1867; and from the California Academy of Sciences, San Francisco, January 13, 1868, announcing donations for the Library; also, from the Society of Natural Sciences at Freiburg, March 1, 1867, accompany-

ing a donation, and acknowledging the receipt of publications of this Society; from the Imperial Society of Sciences, at Moscow, November 4 and 16, 1867; from the Royal Society of Edinburgh, December 19, 1867; and from the Peabody Institute of Baltimore, February 12, 1868, returning acknowledgments for publications of this Society.

Donations for the Library were announced: From the Academies—the Imperial, of Sciences, at St. Petersburg; the Royal Prussian, of Sciences, at Berlin; and the California, of Sciences. Societies—of Sciences, at Görlitz; Natural History, at Freiburg; the Geological, at Berlin; the Royal, of Edinburgh; the Royal Geographical, of London; the Chemical, of London; and the Boston Natural History. From Brevet Brigadier General Henry L. Abbott, U.S.A.; from Dr. Curwen, of Harrisburg; from Dr. T. S. Kirkbride, and Rev. J. A. Childs, of the Episcopal Hospital.

Judge Sharswood announced the decease of Joseph R. Ingersoll, a member, as having occurred February 20, 1868, aged 82; and, in doing so, paid a feeling tribute to his memory. And Professor Trego, the decease of Tobias Wagner, also a member, which occurred February 19, 1868, aged 75 years.

On motion, Judge Sharswood was appointed to prepare an obituary notice of Mr. Ingersoll, and Dr. Hayden to prepare one of the late Professor Dewey.

Mr. P. E. Chase exhibited a specimen of a fragment of a steel-rail which had passed through a process of rolling. A broken rail had been placed in the centre of an ingot mould, and Bessemer steel cast around it. The ingot thus formed, was rolled into a new rail, and this second rail was subsequently re-rolled into a rod of three-quarter inch bolt-iron. The cross sections of the rod still retained the miniature outlines of the original bar, distinctly marked in the centre.

He also called attention to an article in the "Transactions of the Royal Society of Edinburgh," which furnished a basis for some interesting general deductions, in reference to the laws of magnetic declination.

abutments, or by a tie-band at the bottom. In the case of an arch (or of its reverse, a suspension bridge), this disposition of the load is proper, but, in domical structure, even when of stone or brick, where the only tensional strength of each course as a band, is that derived from the friction of superimposition, and, more evidently yet, when of iron, there is no reason why all the available strength of the materials should not be employed.

In brickwork domes, hoop-iron bands laid in the courses would give immense strength.

But the great point to which he would call attention, was the want of mathematical investigation. The subject embraced not only domes and their varieties of thickness, but included a flat plate, supported on all sides (or all around), and even of this general and common case, we had no formula connecting the strength of materials (either by compression or extension), with surface and thickness.

No demonstration had shown whether the head of a cylinder should be concave, or convex, or flat.

Mr. Briggs remarked that it was probable that some student, following in the steps of M. Lamé, would solve these problems; but now they stood a reproach to "applied mechanics," that practical operations were inexplicable.

The minutes of the Board of Officers and Council at their last meeting, were read.

Pending nomination, No. 586, and new nominations, Nos. 587 and 588, were read.

General T. S. Kane offered the following preamble and resolution, which were considered and adopted:

Whereas, There is reason to believe that the Northwestern Territory, recently ceded to the United States by the Russian Government, possesses resources, in productions and naval facilities, of much greater value and importance than has hitherfore been supposed, the early development of which, by explorations in Geodesy and Natural History, is deemed to be of high importance to the interests, both of science and of commerce, therefore—

Resolved, That the officers of this Society be requested to sign and transmit to Congress a memorial, asking the earliest possible action for the commencement and execution of proper 1868.] 381

examinations, upon the coast and within the said territory, by the officers of the Coast Survey, and others of competent scientific ability and experience.

And the Society was adjourned.

Stated Meeting, March 6, 1868.

Present, ten members.

Dr. Wood, President, in the Chair.

Mr. John Welsh, a recently elected member, was introduced, and took his seat.

Mr. Batchelder, a member of a corresponding Society, was introduced.

Letters were read from Henry Barnard, Commissioner of Education, February, 1868; from the University at Lund, in Sweden, August, 1867, accompanying a donation for the Library, and soliciting an exchange of publications; from the Imperial Academy of Sciences, at Vienna, November 26, 1867, announcing a donation for the Library; and from the Hon. Charles O'Neill, House of Representatives, February 27, 1868, acknowledging the reception of the Society's memorial, recommending a scientific examination of the Territory of Alaska.

Donations for the Library were announced: From the Universities at Christiania, Norway, and at Lund, Sweden; from the Imperial Academy at Vienna; from Dr. F. C. Noll, Editor of the "Zoological Garden;" from Prof. Fr. Zantedeschi, Venice; from the Royal Astronomical Society of London; from the American Antiquarian Society; from Professor George W. Cook, Geologist of the State of New Jersey; from the Franklin Institute; the publisher of the Medical News; and from Mr. Edward Miller.

On motion, ordered that the University at Lund be placed on the List of Corresponding Societies, also be furnished with the Transactions from the present volume.